THE RECORD/1972

THE SOCIETY OF THE NEW YORK HOSPITAL

The New York Hospital is a voluntary, non-profit institution operated as a community service by The Society of the New York Hospital, 525 East 68th St., New York, N.Y. 10021

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THE RECORD of The Society of the New York Hospital is published annually to provide its friends and contributors with current information about the activities of The New York Hospital-Cornell Medical Center.

A "Born Loser" Wins!

The baseball bat fell from Matt's hands. His skin was blue. His breathing labored. Once again he was out. Huddled on the sidelines with his dog, Colby, the 5-year-old boy sat alone, dejected. His blue eyes filled with tears. "Why can't I ever win?" he asked. Colby whimpered sympathetically and licked his master's tear-streaked face.

Matt was a "born loser." The harder he tried, the greater was his defeat. Ever since his first breath the odds were against him. He was born with a defective heart. During his first year of life, the infant's parents, Mr. and Mrs. James Parks, were warned that the tiny "blue baby" might be denied a future. Their son was afflicted with a combination of congenital heart abnormalities that permits oxygen-poor (blue) blood to circulate throughout the body. This was why Matt could not hit a winning run.

When Matt was three years old his parents brought him to see Dr. Mary Allen Engle. Dr. Engle is Director of Pediatric Cardiology at The New York Hospital and Professor of Pediatrics at Cornell University Medical College. Dr. Engle's examination of the little boy revealed that not only did he have a malformed heart but that it was on the right side, instead of the left. All of the organs of his body were inverted as in a mirror. Only his heart was deformed, however, and the reversed position of his organs did not affect their ability to function normally.

An exact diagnosis and evaluation of Matt's cardiac condition were made possible by giving him an angiocardiogram, a special kind of X-ray of the heart, and cardiac catheterization. This procedure enabled the doctors to visualize the abnormalities inside his heart and to measure pressures and oxygen in the chambers and arteries.

To help Matt's parents understand his problem, Dr. Engle explained that the function of the heart is to pump blood through the

vessels. Two pumps are required to do the job, one to move blood to the lungs, the other to push it out into the body. After the blood has circulated through the body it returns to the right pumping chamber or ventricle of the heart. It is then pumped through the pulmonary artery to the lungs where it picks up oxygen and becomes red or arterial blood. The arterial blood then comes back to the left pumping chamber which sends it out to the body. In the normal heart, blood is pumped from the right ventricle into the pulmonary artery at a low pressure. A wall divides the two pumping chambers so that the blood does not mix and the pressure is kept low on the right side and high enough on the left side to be pumped out to the body.

During the development of Matt's heart, nature erred. The little boy was born with a big hole in the wall between the two pumping chambers. In addition to this serious malformation, an obstruction narrowed the opening that leads to the pulmonary artery and the lungs. This slowed down the passage of blood to his lungs. As a result of these two defects, the pressure in the right ventricle rose as high as in the left ventricle. This in turn caused the wall of the right ventricle to become enlarged. Each of these defects was sufficient to play havoc with Matt's heart. Together, they set up a combination of hurdles that forced some of his blood to by-pass the lungs and to flow directly into the aorta and out to his body. This made him look blue and become breathless when he exercised.

While operations to correct multiple defects similar to Matt's are successfully performed on infants and small children, several operations in graduated steps, rather than one, are sometimes required. Under Dr. Engle's care, Matt was able to wait for the surgical repair of his heart until he was the right age and size to enable the surgeon to correct all of the defects in one operation.

BIG MAN IN HIS LIFE: Matt says hello to Dr. Paul Allen Ebert, the surgeon who mended his heart.

When Matt was five years old he started kindergarten. By November he became too ill to continue. On March 9, the day after Matt's sixth birthday, his parents brought him to The New York Hospital. Further examinations and tests reconfirmed the earlier diagnosis. Matt was ready for surgery.

Two days before Matt's operation, he was admitted to the hospital. "This was done not only to prepare him physically for the operation but emotionally," said Dr. Engle. "Matt was never afraid," said his mother, "nor were we. All of us knew exactly what to expect."

Sherry Harper, a pediatric nurse, used sketches and a doll as a model to visually explain to Matt each pre and post-operative step. Before the day was over Matt had operated on his first patient, the doll, and hooked it up to the I.V. apparatus in his make-believe intensive care unit.

"Don't you worry," he reassured his patient. "You'll be with my friends when you wake up and they won't let anything bad happen to you." Before he went to sleep the night before his operation he soberly explained to his father exactly what the doctors and nurses planned to do "for me to get me well."

At 7:30 A.M. on April 13, Matt with his two "Snoopy" dogs cuddled in his arms, was wheeled to the operating room. Dr. Paul A. Ebert and his surgical team were ready to perform open heart surgery. Dr. Ebert is Surgeon-in-Chief at The New York Hospital and Chairman of the Department of Surgery at Cornell University Medical College.

Matt is checked by his cardiologist, Dr. Mary Allen Engle.

Matt was placed on the heart-lung machine, which performed the functions of both of these life-sustaining organs while his heart was repaired. This procedure provides the surgeon with an unobstructed view of the open heart.

While Matt's heart was stopped, the serious and delicate surgery was begun to repair the defects. Dr. Ebert removed the enlarged muscle in the wall of the right pumping chamber and widened the opening beneath the pulmonary valve. The big hole in the wall between the two pumping chambers was sealed with a sturdy plastic patch.

Matt was removed from the heart-lung machine. His heart, no longer defective, took over the job. Unobstructed, the blood flowed freely into his lungs. Matt turned pink! His circulation was normal.

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Emergency Aid for Heart Arrest

The doctor's voice rang out with authority.

"Everybody off the table!" The group around him sprang back.

"Shocking on the count of three," he continued, pressing paddles to the patient's chest. "One, two, THREE!" He drew back, felt the carotid pulse, loked at the EKG monitor and sighed with relief. It showed a normal heartbeat.

In reality there was no heartbeat and never had been. The "patient" on the table was a manikin. But what was going on could save a life.

This scene was one that takes place frequently in a classroom at The New York Hospital. Under a program sponsored by the New York Heart Association, our Hospital has become a Cardiopulmonary Resuscitation Instructor Training Center. Our own experts in the techniques of combatting cardiac arrest are teaching doctors and nurses from other institutions not only how to do it, but also how to teach others to do it. By the end of June, three classes, each consisting of 20 to 25 people, had gone through the course and two additional classes are scheduled for the fall. This means that by early autumn nearly 125 specialist-teachers will have gone back to their own hospitals to educate the staff of their institutions.

Dr. Joseph G. Hayes, who is director of the Hospital's Cardiac Graphics Laboratory, formerly known as the Heart Station, is in charge of the program. Dr. Hayes is an Assistant Attending Physician at the Hospital and an Assistant Professor of Medicine in Cornell University Medical College. He is also a member of the New York Heart Association's Committee on Cardiopulmonary Resuscitation. Working with Dr. Hayes are Dr. John B. Morrison, Assistant Attending Physician at the Hospital and Assistant Professor of Medicine in the College; Nina Argondizzo, R.N.,

Assistant Dean, and Doris Milton, R.N., Assistant in Instruction, both of the Cornell University-New York Hospital School of Nursing. Miss Argondizzo and Miss Milton work in the Nursing School's Program of Continuing Education.

The course through which they guide the student-instructors consists of 15 hours of instruction.

The purpose of cardiopulmonary resuscitation is to rescue the patient from sudden or unexpected death, characterized by a sudden halt to breathing and to circulation of the blood. After this happens, the vital higher centers of the central nervous system of the body remain "living" for a further period of four to six minutes, during which resuscitation can be attempted. Breathing must be restored, through mouth-to-mouth procedures or the use of masks designed for the purpose, and the heart must be persuaded to resume its beating. This can often be done by a sharp blow delivered at a precise point of the chest, by external massage producing cardiac compression, or by an electric shock delivered by a machine called a defibrillator.

The administration of drugs is a critical part of the treatment of a patient who has suffered cardiac

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Dr. Hayes supervises students practicing chest massage. "Patient" is plastic manikin.

CARDIAC ARREST

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arrest. It is important for those treating the patient to know which drugs are to be administered and in what dosages, and to vary the medication in accordance with the patient's response.

The teachers of the course use slide projectors, but they do not rely on slides and lectures alone. Very vital to the instruction are life-like manikins, sized from infants to adults, on which the students practice heart massage and artificial breathing. Each manikin has a "pulse" at the proper location in the neck, the beating of which is controlled by a rubber tube and bulb held by the instructor. In this way the student learns in the most vivid fashion possible if he is giving the treatment properly and how the patient would respond to his efforts.

The students also practice using the defibrillator. Part of the defibrillator is an electrocardiograph machine which shows the patient's heartbeat, and any irregularity which is present. This information is necessary for proper treatment. During the classes the defibrillator is attached to an ingenious teaching machine. By pressing various buttons, the instructor may represent on the monitor many different types of heart difficulties. The student is then called upon to deal with them and the effectiveness of what he does is shown on the monitor, just as it would be in the treatment of an actual patient.

In addition to this program for training doctors and nurses from other institutions, Dr. Hayes is directing an intensive program for the staff of our own Hospital, by which it is planned to give a review course in emergency cardiopulmonary resuscitation to all nurses and doctors on the House Staff of The New York Hospital.

Today with greater knowledge, new medications and new machines, many lives can be saved that were formerly lost. In this field, as in others, The New York Hospital is demonstrating its dedication by deeds, as well as by words, to the improvement of patient care.

"BORN LOSER"

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"He's a lovely color!," Dr. Engle told his parents who had waited for this happy day for six years.

"Everyone was superb," said Matt's mother who stayed with him while he was in the hospital. "They cared for him not only with skill but with love and understanding."

On May 1, Matt went home where he received a royal welcome not only from brothers Tommy and Jerry and sister Anne Marie but from "man's best friend," Colby, as well as his feline playmates, Tiger and Puss Puss.

"Matt has forgotten how to walk," said his mother. "He runs everywhere, swims every day and is as agile as an Indian. No one can hold him down!" Dr. Engle, who sees Matt for periodic check-ups in the Pediatric Cardiac Clinic, agrees.

Matt has cleared all the obstacles. He can hit a winning run!

Teresa Shows the World a Happy Face

The dentist can clean, repair or replace your teeth. The orthodontist can straighten them to correct a poor bite and give you a more attractive smile. But what if the problem lies beyond the dentist's and orthodontist's reach, in the structure of the jaw itself?

Teresa McKay was born with a defect in the growth center of the joint of her left jaw, that part of the joint which helps to regulate the development of the jawbones. As her face developed, this birth defect caused her upper jawbone to grow so far forward that it stuck out of her mouth. The growth of her lower jaw was stunted and turned to the left.

Her protruding upper jaw combined with her severely receding chin and lower jaw made it very difficult for Teresa to chew, swallow and speak. Worse still, her appearance drew cruel taunts from other children.

When she was 15 years old a minor injury brought Teresa to The New York Hospital where an examing doctor noted the condition of her mouth and referred her to oral surgeon Dr. Stanley J. Behrman, an expert in the surgical correction of jaw injuries and deformities.

Dr. Behrman is Surgeon-in-Charge of the Oral Surgery Division of the Department of Surgery at The New York Hospital and Clinical Associate Professor of Surgery in Dentistry at Cornell University Medical College.

The oral surgeon's special domain is the lower half of the face and his special skill the repair of jaws shattered by injury or misshapen, like Teresa's, by flaws in their development. Improper development may result from a birth defect or an injury to the jaws at a critical stage in their growth.

Whatever the cause, jaws which grow too much or too little or in the wrong direction disrupt those physical functions in which the mouth plays a vital role like chewing, swallowing, speaking and

breathing. Disruption of these activities may lead to problems elsewhere in the body such as intestinal problems from inadequately chewed food or an enlarged pharynx developed to compensate for difficulties in speech and breathing.

Oral surgeons can improve or correct most functional disturbances by means of a number of ingenious procedures which move different parts of the jawbones into more normal relationships with each other.

However, Dr. Behrman points out, physical function is only half of the problem in any jaw deformity. "Function to me," he says, "also means being able to function as a human being in society, and, in a social context, appearance is an important factor."

Facial defects are the most noticeable of all physical abnormalities and even minor flaws can greatly annoy their owners. A jutting jaw, receding chin or buck teeth can influence how others feel about a person and how he feels about himself. A truly dramatic defect like Teresa's can not only cause great personal anguish but also hinder such activities as seeking a job.

Consequently, the oral surgeon must plan the delicate and complex operations he performs with as much thought for the apearance of the face as for proper physical function. If more than one surgical possibility exists, he may ask the patient to choose the profile he prefers.

Before Dr. Behrman operated on Teresa he spent many hours in research to determine the exact nature and extent of her problem and the best way to correct it from the standpoints of facial symmetry, function and aesthetics.

He took photographs and cephalograms, life-size x-rays of Teresa's head, on which he made precise measurements of the relation of her jaws to each other and to her skull. He also made a number of models and plaster casts of Teresa's mouth.

He then made more measurements and did "trial surgery" on the

We Need Your Help:

A gift to The New York Hospital gives aid to the ill and the distressed, supports programs which educate doctors for the future, and makes possible research to stamp out disease, helping people here today and generations yet unborn.

The New York Hospital encourages gifts without restriction so as to permit greater facility in planning and administering its extensive and complex programs of patient care and medical education.

For further information please consult your attorney or the office of the Secretary and Treasurer of The Society of the New York Hospital, 525 East 68 St., New York, N. Y. 10021.

Dr. Behrman shows Teresa X-rays and drawings he used in planning surgical reconstruction of her face.

models and casts to determine which surgical procedures would produce the best results.

With his research completed, Dr. Behrman began the demanding task of transforming the measurements and models into realities.

Repair of Teresa's jaws required five surgical procedures over a period of time. Dr. Behrman first performed two procedures on her upper jaw to correct the protrusion, the most dramatic part of her malformation, and to widen the rear portion of the jaw. He then performed three more procedures to bring her receding lower jaw forward and to the right. All surgery was performed from the inside of Teresa's mouth, a relatively new technique which avoids external incisions.

Later, orthodontic work straightened Teresa's teeth and further corrected her bite, and tongue and lip training improved her speech and swallowing. Teresa and Dr. Behrman agree that the results are well worth the time, effort, skill and patience required to achieve them.

How does it feel to eat and speak without an effort and, best of all, to have a whole new appearance? Teresa, now an attractive young woman in her early twenties who holds a full-time job, sums it up simply: "I'm so much happier now than I was before the operations."

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